

AMENDMENTS TO THE CLAIMS

1. (currently amended) A process for preparing a support for catalysts, which comprises:
 - a) preparing a hydrogel;
 - b) milling the hydrogel to give a finely particulate hydrogel having a solids content;
 - c) producing a slurry ~~based on~~ having a solids content, the slurry comprising the finely particulate hydrogel;
 - d) drying the slurry comprising the finely particulate hydrogel ~~to give the,~~ thereby forming a support for catalysts,wherein ~~at the~~ the finely particulate hydrogel ~~in which~~ comprises:
 - at least 5% by volume of the particles, based on the total volume of the particles, have a particle size in the range from $> 0 \mu\text{m}$ to $\leq 3 \mu\text{m}$; and/or
 - at least 40% by volume of the particles, based on the total volume of the particles, have a particle size in the range from $> 0 \mu\text{m}$ to $\leq 12 \mu\text{m}$, and/or
 - at least 75% by volume of the particles, based on the total volume of the particles, have a particle size in the range from $> 0 \mu\text{m}$ to $\leq 35 \mu\text{m}$;~~is produced in step b).~~
2. (currently amended) ~~A~~ The process for preparing ~~at the~~ the support for catalysts as claimed in claim 1, wherein ~~at the~~ the finely particulate hydrogel ~~in which~~ comprising at least 90% by volume of the hydrogel particles, based on the total volume of the particles, ~~have~~ has a particle size in the range from $> 0 \mu\text{m}$ to $\leq 35 \mu\text{m}$ ~~is produced in step b).~~
3. (currently amended) ~~A~~ The process for preparing ~~at the~~ the support for catalysts as claimed in claim 1 ~~or 2~~, wherein the finely particulate hydrogel ~~produced in step b)~~ has a solids content in the range from $> 0\%$ by weight to $\leq 25\%$ by weight, ~~preferably in the range from 8% by weight to 13% by weight, more preferably in the range from 9% by weight to 12% by weight,~~ calculated as oxide.

4. (currently amended) ~~A~~The process for preparing ~~a~~the support for catalysts as claimed in ~~any of the preceding claims~~claim 1, wherein ~~a~~the finely particulate hydrogel in ~~which~~comprising at least 40% by volume, ~~preferably at least 50% by volume~~, of the hydrogel particles, based on the total volume of the particles, ~~have~~has a particle size in the range from $> 0 \mu\text{m}$ to $\leq 10 \mu\text{m}$ ~~is produced in step b)~~.
5. (currently amended) ~~A~~The process for preparing ~~a~~the support for catalysts as claimed in ~~any of the preceding claims~~claim 1, wherein ~~a~~the finely particulate hydrogel in ~~which~~comprising at least 10% by volume of the hydrogel particles, based on the total volume of the particles, ~~have~~has a particle size in the range from $> 0 \mu\text{m}$ to $\leq 2.8 \mu\text{m}$; ~~preferably in the range from $> 0 \mu\text{m}$ to $\leq 2.5 \mu\text{m}$, is produced in step b)~~.
6. (currently amended) ~~A~~The process for preparing ~~a~~the support for catalysts as claimed in ~~any of the preceding claims~~claim 1, wherein inorganic hydroxides, oxide-hydroxides, oxides and/or salts, ~~preferably selected from the group consisting of SiO_2 , Al_2O_3 , MgO , AlPO_4 , TiO_2 , ZrO_2 , Cr_2O_3 and/or~~ mixtures thereof, are added to the hydrogel in step b) and/or the slurry in step c).
7. (currently amended) ~~A~~The process for preparing ~~a~~the support for catalysts as claimed in ~~any of the preceding claims~~claim 1, wherein inorganic hydroxides, oxide-hydroxides, oxides and/or salts are added to the hydrogel in step b) and/or the slurry in step c) in an amount of $\leq 10\%$ by weight, ~~preferably $\leq 5\%$ by weight, particularly preferably $\leq 2\%$ by weight~~, based on the total solids content.
8. (currently amended) ~~A~~The process for preparing ~~a~~the support for catalysts as claimed in ~~any of the preceding claims~~claim 1, wherein AlOOH is added to the hydrogel in step b) and/or the slurry in step c) in an amount of from 1% by weight to 30% by weight, ~~preferably from 5% by weight to 20% by weight~~, based on the total solids content.

9. (currently amended) ~~A~~The process for preparing a support for catalysts as claimed in ~~any of the preceding claims~~claim 1, wherein compounds of alkaline earth metals, preferably selected from the group consisting of $\text{Ca}(\text{OH})_2$ and $\text{Mg}(\text{OH})_2$, are added to the hydrogel in step b) and/or the slurry in step c) in an amount of from 1% by weight to 10% by weight, particularly preferably from 2% by weight to 4% by weight, based on the total solids content.
10. (currently amended) ~~A~~The process for preparing ~~a~~the support for catalysts as claimed in ~~any of the preceding claims~~claim 1, wherein hydroxyl methyl cellulose is added to the hydrogel in step b) and/or the slurry in step c) in an amount of from 0.1% by weight to 10% by weight, particularly preferably from 1% by weight to 2% by weight, based on the total solids content.
11. (currently amended) ~~A~~The process for preparing ~~a~~the support for catalysts as claimed in ~~any of the preceding claims~~claim 1, wherein the solids content of the slurry in step (c) is set to $\leq 20\%$ by weight, preferably $\leq 15\%$ by weight, particularly preferably $\leq 10\%$ by weight, very particularly preferably in the range from 8% by weight to 10% by weight, based on the total weight, in step c).
12. (currently amended) ~~A~~The process for preparing ~~a~~the support for catalysts as claimed in ~~any of the preceding claims~~claim 1, wherein drying of the slurry comprising the finely particulate hydrogel is carried out by means of spray drying.
13. (currently amended) ~~A~~The process for preparing ~~a~~the support for catalysts as claimed in ~~any of the preceding claims~~claim 1, wherein $\leq 5\%$ by volume, preferably $\leq 2\%$ by volume, of the support particles obtained after drying have a particle size in the range from $> 0 \mu\text{m}$ to $\leq 25 \mu\text{m}$, based on the total volume of the particles.
14. (currently amended) ~~A~~The process for preparing ~~a~~the support for catalysts as claimed in ~~any of the preceding claims~~claim 1, wherein the support particles produced after drying

have a mean particle size in the range from 1 μm to 350 μm , ~~preferably in the range from 30 μm to 150 μm and particularly preferably in the range from 40 μm to 100 μm .~~

15. (currently amended) A support for catalysts ~~which can be prepared as claimed in any of the preceding claims~~

by a process comprising:

- a) preparing a hydrogel;
- b) milling the hydrogel to give a finely particulate hydrogel;
- c) producing a slurry comprising the finely particulate hydrogel;
- d) drying the slurry comprising the finely particulate hydrogel, thereby forming a support for catalysts,

wherein the finely particulate hydrogel comprises:

- at least 5% by volume of the particles, based on the total volume of the particles, have a particle size in the range from $> 0 \mu\text{m}$ to $\leq 3 \mu\text{m}$; and/or
- at least 40% by volume of the particles, based on the total volume of the particles, have a particle size in the range from $> 0 \mu\text{m}$ to $\leq 12 \mu\text{m}$, and/or
- at least 75% by volume of the particles, based on the total volume of the particles, have a particle size in the range from $> 0 \mu\text{m}$ to $\leq 35 \mu\text{m}$.

16. (currently amended) ~~A~~The support for catalysts as claimed in claim 15, ~~wherein the further comprising a silicon content of the support is~~of $\geq 10\%$ by weight, preferably $\geq 25\%$ by weight, particularly preferably $\geq 30\%$ by weight, very particularly preferably $\geq 50\%$ by weight, based on the total weight of the support.

17. (currently amended) ~~A~~The support for catalysts as claimed in claim 15 ~~or 16, wherein the further comprising an aluminum content of the support is~~of $\geq 10\%$ by weight, preferably $\geq 25\%$ by weight, particularly preferably $\geq 30\%$ by weight and very particularly preferably $\geq 50\%$ by weight, based on the total weight of the support.

18. (currently amended) ~~The use of a support for catalysts as claimed in any of claims 15 to 17 as catalyst~~A process comprising preparing a catalyst comprising a support, the support being prepared by a process comprising:

- a) preparing a hydrogel;
- b) milling the hydrogel to give a finely particulate hydrogel;
- c) producing a slurry comprising the finely particulate hydrogel;
- d) drying the slurry comprising the finely particulate hydrogel, thereby forming a support for catalysts,

wherein the finely particulate hydrogel comprises:

- at least 5% by volume of the particles, based on the total volume of the particles, have a particle size in the range from $> 0 \mu\text{m}$ to $\leq 3 \mu\text{m}$; and/or
- at least 40% by volume of the particles, based on the total volume of the particles, have a particle size in the range from $> 0 \mu\text{m}$ to $\leq 12 \mu\text{m}$, and/or
- at least 75% by volume of the particles, based on the total volume of the

particles, have a particle size in the range from $> 0 \mu\text{m}$ to $\leq 35 \mu\text{m}$.

19. (currently amended) ~~The use of a support for catalysts as claimed in any of claims 15 to 17 for preparing supported catalysts for the polymerization and/or copolymerization of olefins~~The process of claim 18 wherein the catalyst is a polymerization or copolymerization catalyst for olefins.

20. (new) The process of claim 3 wherein the solids content of the finely particulate hydrogel is in the range of 8% by weight to 13% by weight.

21. (new) The process of claim 20 wherein the solids content of the finely particulate hydrogel is in the range of 9% by weight to 12% by weight.

22. (new) The process of claim 4 wherein the finely particulate hydrogel comprises at least 50% by volume of the hydrogel particles.

23. (new) The process of claim 5 wherein the particle size range of the finely particulate hydrogel is from $> 0 \mu\text{m}$ to $\leq 2.5 \mu\text{m}$.

24. (new) The process of claim 6 wherein the inorganic hydroxides, oxide-hydroxides, oxides and/or salts are selected from the group consisting of SiO_2 , Al_2O_3 , MgO , AlPO_4 , TiO_2 , ZrO_2 , Cr_2O_3 and mixtures thereof.
25. (new) The process of claim 7 wherein the inorganic hydroxides, oxide-hydroxides, oxides and/or salts are added in an amount of $\leq 5\%$ by weight.
26. (new) The process of claim 25 wherein the inorganic hydroxides, oxide-hydroxides, oxides and/or salts are added in an amount of $\leq 2\%$ by weight.
27. (new) The process of claim 8 wherein the AlOOH is added in an amount from 5% by weight to 20% by weight.
28. (new) The process of claim 9 wherein the compounds of alkaline earth metals are selected from the group consisting of $\text{Ca}(\text{OH})_2$ and $\text{Mg}(\text{OH})_2$.
29. (new) The process of claim 9 wherein the compounds of alkaline earth metals are added in an amount from 2% by weight to 4% by weight.
30. (new) The process of claim 10 wherein the hydroxyl methyl cellulose is added in an amount from 1% by weight to 2% by weight.
31. (new) The process of claim 11 wherein the solids content of the slurry in step (c) is $\leq 15\%$ by weight.
32. (new) The process of claim 31 wherein the solids content of the slurry in step (c) is $\leq 10\%$ by weight.
33. (new) The process of claim 32 wherein the solids content of the slurry in step (c) is from 8% by weight to 10% by weight.

34. (new) The process of claim 13 wherein $\leq 2\%$ by volume of the support particles obtained after drying have a particle size in the range from $> 0 \text{ } \mu\text{m}$ to $\leq 25 \text{ } \mu\text{m}$, based on the total volume of the particles.
35. (new) The process according to claim 14 wherein the support particles have a mean particle size in the range from $30 \text{ } \mu\text{m}$ to $150 \text{ } \mu\text{m}$.
36. (new) The process according to claim 35 wherein the support particles have a mean particle size in the range from $40 \text{ } \mu\text{m}$ to $100 \text{ } \mu\text{m}$.
37. (new) The process according to claim 16 wherein the silicon content is $\geq 25\%$ by weight.
38. (new) The process according to claim 37 wherein the silicon content is $\geq 30\%$ by weight.
39. (new) The process according to claim 38 wherein the silicon content is $\geq 50\%$ by weight.
40. (new) The process according to claim 17 wherein the aluminum content is $\geq 25\%$ by weight.
41. (new) The process according to claim 40 wherein the aluminum content is $\geq 30\%$ by weight.
42. (new) The process according to claim 41 wherein the aluminum content is $> 50\%$ by weight.